



# SEQUENCE LISTING

<110> XENOME LTD  
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<120> NOVEL CHI-CONOTOXIN PEPTIDES (-II)

<130> 12373580/JGC

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<160> 215

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Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

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Val Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
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<222> (8)..(9)

<223> Xaa is independently absent or represent any amino acid residue except Cys

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Cys Cys Gly Tyr Lys Leu Cys Xaa Xaa Cys  
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<222> (1)..(1)

<223> Xaa is selected from Trp, DTrp, Tyr, Phe, hPhe, Ala, O-methyl-L-tyrosine, Arg, benzoyl, naphthyl, ornithine, L or D pyroglutamic acid and a deletion

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<222> (2)..(2)

<223> Xaa is selected from Arg, Ala, Asn, Lys, Phe, L-beta-homolysine, L-ornithine, Lys, DArg, L-norleucine, Dlys, L-Lysine(dimethyl), DAsn, Thr, 2-aminobenzoyl (anthraniloyl), naphthyl, L-citrulline, Val, Tyr, Trp, L or D-pyroglutamic acid or a deletion

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<223> Xaa is selected from Gly, Asp, Lys, Arg, Ala, Nle, Ser or Phe

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<223> Xaa is selected from Val, Leu, Nle, Ile, Thr, Ala, Asn, Trp, Phe and Abu

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<222> (12)..(13)

<223> Xaa are independently absent or represent any amino acid residue except Cys

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Xaa Xaa Xaa Xaa Cys Cys Gly Tyr Lys Leu Cys Xaa Xaa Cys

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 L-beta-homolysine, L-ornithine, L-norleucine,  
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 L-citrulline, Val and a deletion

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 <223> Xaa is selected from Gly, Asp, Lys, Arg, Ala, L-norleucine and  
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 except Cys

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 or L-beta-homolysine

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 L-alpha-aminobutyric acid

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Gly Ile Cys Cys Gly Val Ser Phe Cys Tyr Xaa Cys  
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Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Leu Pro Cys  
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Ser Val Cys Cys Gly Tyr Lys Leu Cys Phe Pro Cys  
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Tyr Arg Gly Leu Cys Cys Gly Xaa Lys Leu Cys Arg Xaa Cys  
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<222> (4)..(4)

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<223> Xaa is O-methyl-L-tyrosine

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<222> (14)..(14)

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Xaa Tyr Arg Gly Xaa Cys Cys Gly Xaa Lys Leu Cys Arg Xaa Cys  
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<223> Xaa is O-methyl-L-tyrosine

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Xaa	Gly	Xaa	Cys	Cys	Gly	Xaa	Lys	Xaa	Cys	His	Xaa	Cys
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Trp Arg Gly Val Cys Cys Gly Xaa Lys Leu Cys His Xaa Cys  
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Trp Lys Gly Val Cys Cys Gly Xaa Lys Leu Cys His Xaa Cys  
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Phe	Arg	Tyr	Gly	Xaa	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	Arg	Xaa	Cys
1				5					10					15

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Tyr	Xaa	Arg	Gly	Xaa	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	Arg	Xaa	Cys
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<400> 26

Trp Arg Gly Leu Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys

1 5 10

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 <223> Xaa is L-homoleucine

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Xaa Gly Xaa Cys Cys Gly Tyr Lys Xaa Cys His Xaa Cys  
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<222> (14)..(14)

<223> Xaa is 4-hydroxyproline

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Tyr	Phe	Arg	Gly	Xaa	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	Arg	Xaa	Cys
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Trp	Arg	Gly	Val	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	Arg	Ala	Cys
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<223> Xaa is 4-hydroxyproline

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Trp	Arg	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	His	Xaa	Cys
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Trp	Gly	Leu	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	Arg	Tyr	Cys
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Xaa	Gly	Xaa	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	His	Xaa	Cys
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<222> (8)..(8)

<223> Xaa is O-methyl-L-tyrosine

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Trp	Arg	Gly	Val	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	His	Ala	Cys
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<222> (9)..(9)

<223> Xaa is O-methyl-L-tyrosine

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<222> (14)..(14)

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<222> (14)..(14)

<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 42

Xaa	Gly	Xaa	Cys	Cys	Gly	Xaa	Lys	Xaa	Cys	His	Xaa	Cys
1				5					10			

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<400> 44

Trp	Gly	Leu	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	Arg	Xaa	Cys	Tyr
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<220>

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<222> (3)..(3)

<223> Xaa is L-norleucine

<220>

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<222> (7)..(7)

<223> Xaa is O-methyl-L-tyrosine

<220>

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 45

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<210> 46

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<222> (13)..(13)

<223> Xaa is 4-hydroxyproline

<400> 46

Trp	Asn	Gly	Val	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	His	Xaa	Cys
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<210> 47

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<223> Xaa can be any naturally occurring amino acid

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<400> 47

Asn Gly Xaa Cys Cys Gly Xaa Lys Xaa Cys His Xaa Cys  
1 5 10

<210> 48  
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<400> 48

Xaa Gly Xaa Cys Cys Gly Xaa Lys Xaa Cys His Xaa Cys  
 1 5 10

<210> 49  
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 <223> Xaa can be any naturally occurring amino acid

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<400> 49

Xaa Gly Val Cys Cys Gly Tyr Lys Xaa Cys His Xaa Cys  
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<210> 50  
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<400> 50

Tyr Asn Gly Xaa Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
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<210> 51  
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 <223> Xaa is O-methyl-L-tyrosine

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 <223> Xaa is 4-hydroxyproline

<400> 51

Xaa Gly Leu Cys Cys Gly Xaa Lys Leu Cys His Xaa Cys  
 1 5 10

<210> 52  
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Xaa Gly Xaa Cys Cys Gly Tyr Lys Xaa Cys His Xaa Cys  
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<210> 53  
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<400> 53

Trp Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys His Pro Cys  
 1 5 10

<210> 54  
 <211> 14  
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<400> 54

Trp Arg Gly Val Cys Cys Gly Tyr Lys Leu Cys His Ala Cys  
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<210> 55  
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<220>

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 <223> Xaa is O-methyl-L-tyrosine

<220>  
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 <222> (14)..(14)  
 <223> Xaa is 4-hydroxyproline

<400> 55

Asp	Tyr	Arg	Gly	Xaa	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	Arg	Xaa	Cys
1				5					10					15

<210> 56  
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 <222> (10)..(10)  
 <223> Xaa is L-homoleucine

<400> 56

Tyr	Asn	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Xaa	Cys	His	Pro	Cys
1				5					10				

<210> 57  
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 <223> Xaa is L-norleucine

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 <223> Xaa is L-norleucine

<220>  
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 <222> (12)..(12)  
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<400> 57

Asn Gly Xaa Cys Cys Gly Tyr Lys Xaa Cys His Xaa Cys  
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<210> 58

<211> 13

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<220>

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<222> (3)..(3)

<223> Xaa is L-norleucine

<220>

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 58

Xaa Gly Xaa Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
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<210> 59

<211> 13

<212> PRT

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<400> 59

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Trp Pro Cys  
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<210> 60

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<400> 60

Trp Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Arg Pro Cys  
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<210> 61  
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 <223> Xaa is O-methyl-L-tyrosine

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<220>  
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<400> 62

Tyr Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys Arg Ala Cys  
 1 5 10

<210> 63  
<211> 13  
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<223> synthetic

<400> 63

Asn Asp Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 64  
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<400> 64

Trp Arg Gly Leu Cys Cys Gly Tyr Lys Leu Cys Arg Gly Cys  
1 5 10

<210> 65  
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<223> Xaa is O-methyl-L-tyrosine

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Xaa Gly Leu Cys Cys Gly Xaa Lys Leu Cys Arg Xaa Cys Tyr  
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<210> 66  
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 <223> Xaa is L-norleucine

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<400> 66

Xaa Gly Xaa Cys Cys Gly Tyr Lys Xaa Cys His Xaa Cys  
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<210> 67  
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<400> 67

Xaa Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
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<210> 68  
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<400> 68

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Arg Xaa Cys  
 1 5 10

<210> 69  
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<400> 69

Trp Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Arg Ala Cys  
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<210> 70  
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 1 5 10 15

<210> 71  
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<400> 71

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Trp Xaa Cys  
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<210> 72  
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<400> 72

Trp Asn Gly Leu Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 73  
<211> 13  
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<220>



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 <223> Xaa is L-norleucine

<400> 73

Xaa	Gly	Xaa	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	His	Pro	Cys
1				5					10			

<210> 74  
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 <223> Xaa is 4-hydroxyproline

<400> 74

Asn	Gly	Xaa	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	His	Xaa	Cys
1				5					10			

<210> 75  
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 <223> Xaa is O-methyl-L-tyrosine

<400> 75

Xaa Gly Val Cys Cys Gly Xaa Lys Leu Cys His Pro Cys  
1 5 10

<210> 76

<211> 13

<212> PRT

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<223> Xaa is L-beta-homolysine

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<222> (9)..(9)

<223> Xaa is L-homoleucine

<400> 76

Xaa Gly Val Cys Cys Gly Tyr Lys Xaa Cys His Pro Cys  
1 5 10

<210> 77

<211> 13

<212> PRT

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<223> Xaa is D-arginine

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<223> Xaa is O-methyl-L-tyrosine

<220>

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 77

Xaa Gly Val Cys Cys Gly Xaa Lys Leu Cys His Xaa Cys  
1 5 10

<210> 78  
<211> 14  
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<400> 78

Trp Arg Gly Leu Cys Cys Gly Tyr Lys Leu Cys Arg Ala Cys  
1 5 10

<210> 79  
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<400> 79

Xaa Gly Val Cys Cys Gly Xaa Lys Leu Cys His Xaa Cys  
1 5 10

<210> 80  
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<400> 80

Asn	Gly	Xaa	Cys	Cys	Gly	Tyr	Lys	Xaa	Cys	His	Xaa	Cys
1				5					10			

<210> 81  
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<220>  
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<400> 81

Tyr	Asn	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	Arg	Ala	Cys
1				5					10				

<210> 82  
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<400> 82

Trp	Asn	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	His	Pro	Cys
1				5					10				

<210> 83  
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<400> 83

Phe Gly Gly Phe Cys Cys Gly Xaa Lys Leu Cys Arg Ala Cys  
1 5 10

<210> 84

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

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<400> 84

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Arg Pro Cys  
1 5 10

<210> 85

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

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<400> 85

Trp Lys Asp Leu Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 86

<211> 14

<212> PRT

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Tyr Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys His Pro Cys  
1 5 10

<210> 87

<211> 13

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<220>  
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<400> 87

Xaa	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	Arg	Xaa	Cys
1				5					10			

<210> 88  
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<400> 88

Tyr	Asn	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	His	Xaa	Cys
1				5					10				

<210> 89  
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<212> PRT  
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<220>  
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<400> 89

Tyr	Asn	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	Arg	Pro	Cys
1				5					10				

<210> 90  
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<400> 90

Trp Lys Asp Leu Cys Cys Gly Tyr Lys Leu Cys Trp Pro Cys  
1 5 10

<210> 91

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 91

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Trp Pro Cys  
1 5 10

<210> 92

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 92

Trp Lys Asp Val Cys Cys Gly Tyr Lys Leu Cys Trp Pro Cys  
1 5 10

<210> 93

<211> 13

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<223> Xaa is L-beta-homolysine

<400> 93

Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 94

<211> 13

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<400> 94

Tyr Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys Pro Cys  
1 5 10

<210> 95  
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<220>  
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<400> 95

Trp Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 96  
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<220>  
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<222> (3)..(3)  
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<220>  
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<400> 96

Xaa Gly Xaa Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 97  
<211> 13  
<212> PRT  
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<220>  
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<400> 97

Asn Gly Leu Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 98  
<211> 13  
<212> PRT  
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<220>  
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<400> 98

Arg Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 99  
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<220>  
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<400> 99

Gly Tyr Lys Leu Gly Cys Cys Gly Tyr Lys Leu Cys Cys  
1 5 10

<210> 100  
 <211> 16  
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<220>  
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<400> 100

Trp	Ala	Ala	Asn	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	His	Xaa	Cys
1				5					10					15	

<210> 101  
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 <222> (12)..(12)  
 <223> Xaa is 4-hydroxyproline

<400> 101

Xaa	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	His	Xaa	Cys
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<210> 102  
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<223> Xaa is L-1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 102

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 103

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<222> (1)..(1)

<223> Xaa is D-arginine

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 103

Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 104

<211> 14

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<222> (1)..(1)

<223> Xaa is O-methyl-L-tyrosine

<400> 104

Xaa Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 105

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<400> 105

Gly Ile Leu Arg Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro  
1 5 10 15

Cys

<210> 106

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<222> (14)..(14)

<223> Xaa is 4-hydroxyproline

<400> 106

Trp Ala Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10 15

<210> 107

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<223> Xaa is L-norleucine

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<223> Xaa is O-methyl-L-tyrosine

<220>

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 107

Xaa Gly Val Cys Cys Gly Xaa Lys Leu Cys His Xaa Cys

**1                      5                      10**

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<212> PRT
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<223> Xaa is L-ornithine
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<220>
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<223> Xaa is L-ornithine

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**<400> 1'08**

Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

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<223> Xaa can be any naturally occurring amino acid
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<223> Xaa can be any naturally occurring amino acid
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<223> Xaa is 4-hydroxyproline

<400> 109

Trp Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 110

<211> 14

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<400> 110

Tyr Asn Lys Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 111

<211> 13

<212> PRT

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<223> Xaa is L-beta-homolysine

<220>

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<222> (12)..(12)

<223> Xaa is L-1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 111

Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 112

<211> 13

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<222> (3)..(3)

<223> Xaa is L-norleucine

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 112

Asn Gly Xaa Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
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<210> 113

<211> 13

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<222> (7)..(7)

<223> Xaa is O-methyl-L-tyrosine

<400> 113

Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys His Pro Cys  
1 5 10

<210> 114

<211> 13

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<223> Xaa is L-beta-homolysine

<220>

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 114

Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
 1 5 10

<210> 115  
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<400> 115

Asn Gly Leu Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
 1 5 10

<210> 116  
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<400> 116

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
 1 5 10

<210> 117  
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<400> 117

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Lys Cys  
 1 5 10

<210> 118  
 <211> 14  
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<400> 118

Tyr Asn Arg Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 119

<211> 13

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<222> (1)..(1)

<223> Xaa is L-norleucine

<220>

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 119

Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 120

<211> 14

<212> PRT

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<222> (1)..(1)

<223> Xaa is benzoyl

<400> 120

Xaa Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 121

<211> 13

<212> PRT

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 <222> (1)..(1)  
 <223> Xaa is D-lysine

<220>  
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 <222> (12)..(12)  
 <223> Xaa is 4-hydroxyproline

<400> 121

Xaa	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	His	Xaa	Cys
1				5					10			

<210> 122  
 <211> 13  
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<400> 122

Asn	Lys	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	His	Pro	Cys
1				5					10			

<210> 123  
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 <223> Xaa is O-methyl-L-tyrosine

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 <222> (12)..(12)  
 <223> Xaa is 4-hydroxyproline

<400> 123

Asn	Gly	Val	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	His	Xaa	Cys
1				5					10			

<210> 124  
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<212> PRT  
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<223> Xaa can be any naturally occurring amino acid

<400> 124

Asn Ala Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 125  
<211> 13  
<212> PRT  
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<400> 125

Asn Gly Ile Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 126  
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<222> (9)..(9)  
<223> Xaa is L-norleucine

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<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline

<400> 126

Asn Gly Val Cys Cys Gly Tyr Lys Xaa Cys His Xaa Cys  
1 5 10

<210> 127  
<211> 13

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<223> Xaa is L-Lysine (dimethyl)

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<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline)

<400> 127

Xaa	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	His	Xaa	Cys
1				5					10			

<210> 128  
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<223> Xaa is D-asparagine

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<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline

<400> 128

Xaa	Gly	Val	Cys	Cys	Gly	Tyr	Lys	Leu	Cys	His	Xaa	Cys
1				5					10			

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<222> (12)..(12)  
 <223> Xaa is L-Pipecolic acid (homo proline)  
  
 <400> 129  
  
 Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
 1 5 10

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<400> 130  
  
 Ala Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
 1 5 10

<210> 131  
 <211> 14  
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 <223> Xaa is naphthyl

<400> 131  
  
 Xaa Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
 1 5 10

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 <222> (3)..(3)  
 <223> Xaa can be any naturally occurring amino acid

<400> 132

Tyr Asn Xaa Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
 1 5 10

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<400> 133

Phe Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
 1 5 10

<210> 134  
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 <222> (11)..(11)  
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<400> 134

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Xaa Pro Cys  
 1 5 10

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 <400> 135  
  
 Thr Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
 1 5 10

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 <223> Xaa is 4-hydroxyproline

<400> 136  
  
 Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
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<400> 137  
  
 Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
 1 5 10

<210> 138  
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<400> 138

Asn Gly Thr Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 139

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<222> (1)..(1)

<223> Xaa is L-Citrulline

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 139

Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 140

<211> 14

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<223> Xaa is L-pyroglutamic acid

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<222> (8)..(8)

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<222> (8)..(8)

<223> Xaa can be any naturally occurring amino acid



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 <222> (13)..(13)  
 <223> Xaa is 4-hydroxyproline  
  
 <400> 140  
  
 Xaa Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys His Xaa Cys  
 1 5 10

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 <223> Xaa is O-methyl-L-tyrosine  
  
 <400> 141

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
 1 5 10

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 <222> (12)..(12)  
 <223> Xaa is 4-hydroxyproline

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<210> 143  
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<222> (1)..(1)

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<223> Xaa is 4-hydroxyproline

<400> 143

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
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<210> 144

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<222> (1)..(1)

<223> Xaa is D-pyroglutamic acid

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 144

Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 145

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<400> 145

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Ala Cys  
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<400> 146

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
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<400> 147

Asp Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

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<400> 148

Val Cys Cys Gly Tyr Lys Leu Cys Cys  
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<210> 149  
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<400> 149

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
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<400> 150

Asn Gly Ala Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 151  
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<400> 151

Asp Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

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Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
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<210> 153

<211> 13

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 153

Asn Gly Ala Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 154

<211> 13

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<222> (1)..(1)

<223> Xaa is L-pyroglutamic acid

<220>

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 154

Xaa Asp Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 155

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<400> 155

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Phe Cys  
1 5 10

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<400> 156

Asn Ser Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
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<210> 157

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<222> (1)..(1)

<223> Xaa is L-pyroglutamic acid

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<222> (13)..(13)

<223> Xaa is 4-hydroxyproline

<400> 157

Xaa Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 158

<211> 13

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<222> (12)..(12)

<223> Xaa is L-thiazolidine-4-carboxylic acid

<400> 158

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 159

<211> 13

<212> PRT

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<400> 159

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Glu Cys  
1 5 10

<210> 160

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<222> (3)..(3)

<223> Xaa can be any naturally occurring amino acid

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 160

Asn Gly Xaa Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 161

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<222> (1)..(1)

<223> ACETYLATION

<400> 161

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 162

<211> 13

<212> PRT

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<223> synthetic

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<222> (12)..(12)

<223> Xaa is L-norleucine

<400> 162

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 163

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

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<400> 163

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Gln Pro Cys  
1 5 10

<210> 164

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<222> (1)..(1)

<223> Xaa is D-pyroglutamic acid

<220>

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<222> (12)..(12)

<223> Xaa is 4-hydroxyproline



<400> 164

Xaa Gly Val Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 165

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<400> 165

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys His Tyr Cys  
1 5 10

<210> 166

<211> 13

<212> PRT

<213> Artificial Sequence

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<223> synthetic

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<222> (6)..(6)

<223> Xaa is D-lysine

<400> 166

Asn Gly Val Cys Cys Xaa Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 167

<211> 13

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<213> Artificial Sequence

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<223> synthetic

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<222> (8)..(8)

<223> Xaa is L-Lysine (dimethyl)

<220>

<221> MISC\_FEATURE

<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 167

Asn Gly Val Cys Cys Gly Tyr Xaa Leu Cys His Xaa Cys  
1 5 10

<210> 168

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<220>

<221> MISC\_FEATURE

<222> (7)..(7)

<223> Xaa is L-homotyrosine

<220>

<221> MISC\_FEATURE

<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 168

Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys His Xaa Cys  
1 5 10

<210> 169

<211> 13

<212> PRT

<213> Artificial Sequence

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<223> synthetic

<220>

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<222> (11)..(11)

<223> Xaa is L-3-pyridylalanine

<400> 169

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Xaa Pro Cys  
1 5 10

<210> 170

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 170

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Lys Pro Cys  
1 5 10

<210> 171

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 171

Tyr Asn Gly Val Cys Cys Gly Leu Lys Leu Cys His Pro Cys  
1 5 10

<210> 172

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 172

Asn Gly Val Cys Cys Gly Tyr Ala Leu Cys His Pro Cys  
1 5 10

<210> 173

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<220>

<221> MISC\_FEATURE

<222> (9)..(9)

<223> Xaa is 4-hydroxyproline

<400> 173

Cys Cys Gly Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 174

<211> 14

<212> PRT

<213> Artificial Sequence

<220>  
 <223> synthetic  
  
 <400> 174  
  
 Tyr Asn Gly Val Cys Cys Gly Tyr Leu Leu Cys His Pro Cys  
 1 5 10

<210> 175  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic  
  
 <400> 175  
  
 Tyr Asn Gly Val Cys Cys Gly Tyr Lys Asn Cys His Pro Cys  
 1 5 10

<210> 176  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<220>  
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 <222> (7)..(7)  
 <223> Xaa is L-2-furylalanine

<400> 176  
  
 Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys His Pro Cys  
 1 5 10

<210> 177  
 <211> 13  
 <212> PRT  
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<220>  
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 <222> (12)..(12)  
 <223> Xaa is 4-hydroxyproline

<400> 177

Asn Gly Val Cys Cys Gly Tyr Arg Leu Cys His Xaa Cys  
 1 5 10

<210> 178  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
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<220>  
 <221> MISC\_FEATURE  
 <222> (11)..(11)  
 <223> L-histidine(benzyloxymethyl)

<400> 178

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Xaa Pro Cys  
 1 5 10

<210> 179  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<400> 179

Tyr Asn Gly Val Cys Cys Gly Tyr Phe Leu Cys His Pro Cys  
 1 5 10

<210> 180  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
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<220>  
 <221> MISC\_FEATURE  
 <222> (11)..(11)  
 <223> Xaa is L-histidine(3-methyl)

<400> 180

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Xaa Pro Cys  
 1 5 10

<210> 181

<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<400> 181

Asn Gly Val Cys Cys Gly Tyr His Leu Cys His Pro Cys  
1 5 10

<210> 182  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<220>  
<221> MISC\_FEATURE  
<222> (1)..(1)  
<223> Xaa is L-pyroglutamic acid

<220>  
<221> MISC\_FEATURE  
<222> (8)..(8)  
<223> Xaa is L-norleucine

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline

<400> 182

Xaa Gly Val Cys Cys Gly Tyr Xaa Leu Cys His Xaa Cys  
1 5 10

<210> 183  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<220>  
<221> MISC\_FEATURE  
<222> (6)..(6)  
<223> Xaa is D-glutamic acid

<400> 183

Asn Gly Val Cys Cys Glu Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 184  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<400> 184

Tyr Asn Gly Val Cys Cys Gly Asn Lys Leu Cys His Pro Cys  
1 5 10

<210> 185  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<220>  
<221> MISC\_FEATURE  
<222> (8)..(8)  
<223> Xaa is L-norleucine

<400> 185

Asn Gly Val Cys Cys Gly Tyr Xaa Leu Cys His Pro Cys  
1 5 10

<210> 186  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<400> 186

Asn Gly Val Cys Cys Ser Tyr Lys Leu Cys His Pro Cys  
1 5 10

<210> 187  
<211> 13  
<212> PRT  
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<220>  
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 <222> (1)..(1)  
 <223> Xaa is L-pyroglutamic acid

<220>  
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 <222> (12)..(12)  
 <223> Xaa is 4-hydroxyproline

<400> 187

Xaa Gly Val Cys Cys Gly Trp Lys Leu Cys His Xaa Cys  
 1 5 10

<210> 188  
 <211> 13  
 <212> PRT  
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<220>  
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<220>  
 <221> MISC\_FEATURE  
 <222> (6)..(6)  
 <223> Xaa is D-serine

<400> 188

Asn Gly Val Cys Cys Xaa Tyr Lys Leu Cys His Pro Cys  
 1 5 10

<210> 189  
 <211> 13  
 <212> PRT  
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<220>  
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<220>  
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 <222> (1)..(1)  
 <223> Xaa is L-pyroglutamic acid

<220>  
 <221> MISC\_FEATURE  
 <222> (8)..(8)  
 <223> Xaa is L-Citrulline

<220>  
 <221> MISC\_FEATURE



<222> (12)..(12)  
 <223> Xaa is 4-hydroxyproline  
  
 <400> 189  
  
 Xaa Gly Val Cys Cys Gly Tyr Xaa Leu Cys His Xaa Cys  
 1 5 10

<210> 190  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<220>  
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 <222> (12)..(12)  
 <223> Xaa is 4-hydroxyproline  
  
 <400> 190

Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Ala Xaa Cys  
 1 5 10

<210> 191  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<220>  
 <221> MISC\_FEATURE  
 <222> (7)..(7)  
 <223> Xaa is L-1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid  
  
 <400> 191

Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys His Pro Cys  
 1 5 10

<210> 192  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<220>

<221> MISC\_FEATURE  
 <222> (6)..(6)  
 <223> Xaa is D-phenylalanine

<400> 192

Asn	Gly	Val	Cys	Cys	Xaa	Tyr	Lys	Leu	Cys	His	Pro	Cys
1				5					10			

<210> 193  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<220>  
 <221> misc\_feature  
 <222> (11)..(11)  
 <223> Xaa can be any naturally occurring amino acid

<400> 193

Gly	Ile	Cys	Cys	Gly	Val	Ser	Phe	Cys	Tyr	Xaa	Cys
1				5					10		

<210> 194  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<400> 194

Asn	Gly	Val	Cys	Cys	Gly	Tyr	Gln	Leu	Cys	His	Pro	Cys
1				5					10			

<210> 195  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<400> 195

Tyr	Asn	Gly	Val	Cys	Cys	Gly	Glu	Lys	Leu	Cys	His	Pro	Cys
1				5					10				

<210> 196

<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<400> 196

Asn Gly Val Cys Cys Gly Tyr Lys Lys Cys His Pro Cys  
1 5 10

<210> 197  
<211> 13  
<212> PRT  
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<220>  
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<220>  
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<222> (1)..(1)  
<223> Xaa is L-pyroglutamic acid

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline

<400> 197

Xaa Gly Val Cys Cys Gly Glu Lys Leu Cys His Xaa Cys  
1 5 10

<210> 198  
<211> 13  
<212> PRT  
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<220>  
<223> synthetic

<220>  
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<222> (1)..(1)  
<223> Xaa is L-pyroglutamic acid

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline

<400> 198

Xaa Gly Val Cys Cys Gly Ile Lys Leu Cys His Xaa Cys  
 1 5 10

<210> 199  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<400> 199

Arg Asn Cys Cys Arg Leu Gln Val Cys Cys Gly  
 1 5 10

<210> 200  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
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<220>  
 <221> MISC\_FEATURE  
 <222> (12)..(12)  
 <223> Xaa is 4-hydroxyproline

<400> 200

Val Gly Val Asp Asp Gly Tyr Lys Leu Cys His Xaa Cys  
 1 5 10

<210> 201  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<400> 201

Tyr Asn Gly Val Cys Cys Gly Lys Lys Leu Cys His Pro Cys  
 1 5 10

<210> 202  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline

<400> 202

Asn Gly Val Cys Cys Gly Tyr Lys Ala Cys His Xaa Cys  
1 5 10

<210> 203  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline

<400> 203

Asn Gly Val Cys Cys Gly Tyr Ala Leu Cys His Xaa Cys  
1 5 10

<210> 204  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline

<400> 204

Asn Gly Val Cys Cys Gly Ala Lys Leu Cys His Xaa Cys  
1 5 10

<210> 205  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>

<223> synthetic

<220>

<221> MISC\_FEATURE

<222> (12)..(12)

<223> Xaa is 4-hydroxyproline

<400> 205

Asn Gly Val Cys Cys Ala Tyr Lys Leu Cys His Xaa Cys  
1 5 10

<210> 206

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<220>

<221> MISC\_FEATURE

<222> (7)..(7)

<223> Xaa is L-dimethyldopa or L-dimethoxyphenylalanine

<400> 206

Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys His Pro Cys  
1 5 10

<210> 207

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 207

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Arg Pro Cys  
1 5 10

<210> 208

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 208

Tyr Asn Gly Val Cys Cys Gly Tyr Ile Leu Cys His Pro Cys

1 5 10

<210> 209  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<400> 209

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Asp Cys His Pro Cys  
1 5 10

<210> 210  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<400> 210

Tyr Asn Gly Val Cys Cys Gly Tyr Lys Leu Cys Glu Pro Cys  
1 5 10

<210> 211  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<400> 211

Tyr Asn Gly Val Cys Cys Gly Tyr Trp Leu Cys His Pro Cys  
1 5 10

<210> 212  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<400> 212

Tyr Asn Gly Val Cys Cys Gly Tyr Tyr Leu Cys His Pro Cys  
1 5 10

<210> 213  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<220>  
<221> MISC\_FEATURE  
<222> (7)..(7)  
<223> Xaa is L-dimethyldopa or L-dimethoxyphenylalanine

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline

<400> 213

Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys His Xaa Cys  
1 5 10

<210> 214  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic

<220>  
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<222> (7)..(7)  
<223> Xaa is L-Diphenylalanine

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa is 4-hydroxyproline

<400> 214

Asn Gly Val Cys Cys Gly Xaa Lys Leu Cys His Xaa Cys  
1 5 10

<210> 215  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic



<220>  
 <221> MISC\_FEATURE  
 <222> (7)..(7)  
 <223> Xaa is L-Lysine (dimethyl)

<220>  
 <221> MISC\_FEATURE  
 <222> (12)..(12)  
 <223> Xaa is 4-hydroxyproline

<400> 215

Asn	Gly	Val	Cys	Cys	Gly	Xaa	Lys	Leu	Cys	His	Xaa	Cys
1				5					10			